

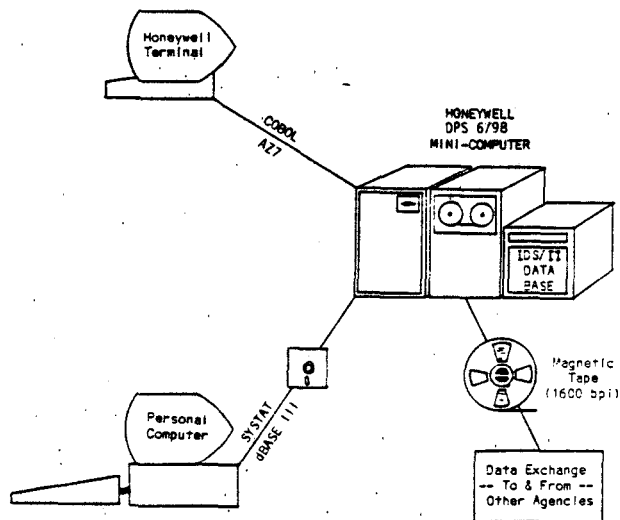


*FISH AND WILDLIFE*  
*INFORMATION SYSTEM DATABASE*

**ANNUAL REPORT**

**PROJECT NO. FW-6-R-1**

**NOVEMBER 1988**



**FUNDING BY:**

**FEDERAL AID IN FISH RESTORATION**

**FEDERAL AID IN WILDLIFE RESTORATION**  
**IDAHO DEPARTMENT OF FISH AND GAME**

# **Fish and Wildlife Data Base Development / Integration**

by  
Judith V. Clark  
DP Database Analyst  
Idaho Department of Fish and Game

Annual Progress Report for 10-1-87 to 9-30-88  
Project No. FW-6-R-1

Funding by  
Federal Aid in Fish Restoration  
Federal Aid in Wildlife Restoration  
Idaho Department of Fish and Game

**November, 1988**

## TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT .....	1
INTRODUCTION .....	1
OBJECTIVES .....	1
DATA BASE OVERVIEW	
Northwest River Study .....	5
Fish Planting .....	12
Access Sites .....	14
Lakes and Reservoirs .....	15
Big Game Harvest Estimates .....	17
SYSTEM FLOW NARRATIVE .....	18

## LIST OF FIGURES

	<u>Page</u>
Figure 1. Implementation schedule for 10-1-87 to 9-30-88 .....	4
Figure 2. Flow chart for Fish and Wildlife Information System data base .....	19

## **PROJECT: Fish and Wildlife Data Base Development/Integration**

### **ABSTRACT**

The Fish and Wildlife Information System Database was developed using IDS/II database software on a Honeywell 6/98 mini-computer located at Idaho Department of Fish and Game Headquarters in Boise, Idaho. The integrated data sets include Northwest River Study information, Anadromous and Resident Fish Planting records, Fish and Game Access Sites, Lake and Reservoir Locations, and Big Game Harvest Estimates. Data is incorporated into the database using batch update programs. On-line access is available at the headquarters office, and each of the 8 field offices, providing query and updating functions. Ad-hoc reporting and data extraction is accomplished using AZ7 software. Approximately twelve major data sets have been identified for inclusion in the database within the next two years. This will provide the Department with a comprehensive view of Fish, Wildlife, and natural resource information in Idaho.

### **INTRODUCTION**

Fish, wildlife, and natural resource data are collected by numerous State, Federal, and private organizations. As a result, data collection efforts can be duplicated, available data can be overlooked, storage mediums (computers) & access methods can be incompatible. different data formats can make it difficult to compile data, and persons requiring the data do not have easy access to it.

Data processing systems developed within the Idaho Department of Fish and Game (IDFG) have not been integrated and thus full advantage has not been taken of them. Numerous applications have been developed using Personal Computers (PC's). Such applications serve the needs of the individual biologist but tend to promote duplication of effort and do not facilitate the sharing of data. Converting existing applications to work in a Data Base environment would greatly enhance the utility of the systems and be of measurable benefit to the Department in executing its responsibility to preserve, protect, perpetuate, and manage the wildlife of the State of Idaho.

The Data Base was converted to an IDS-II data base to run on the Honeywell Mini for its greater storage capacity and multiple user access. Personal Computers will remain an integral part of the Database system. Capabilities to "down-load" data from the IDS-II data base on the mini to dBASE III + on a PC will be provided. The majority of data analysis and summarization is performed on the PC end of the system using extracted subsets of the complete database which is stored on the Honeywell Mini.

### **OBJECTIVES**

#### **Principal**

1. Design, develop, and implement an Idaho Fisheries and Wildlife Information System (FWIS) to provide a common data base for information collected by fish, wildlife, and natural resource related organizations in the State. The FWIS would employ a relational data base and would contain historical data useful for supporting future research studies as well as serving as the storage receptacle for data collected for future studies. A centralized relational database would make these data more accessible to management and research biologists and would enable them to more easily compile data from multiple sources.

Subordinate

2. Design, develop, and implement a mechanism by which PC's may be used to access/update the centralized data base, either on-line or through subsets' of data exchanged on diskette.
3. Provide a mechanism by which the information in the FWIS is maintained and updated by appropriate, verifiable sources. The use of portable computers (data collectors) will be investigated as well as the use of existing PC's for data entry.
4. Assist in the development of identification and measurement standards (e.g. species codes, locations, , etc.) to facilitate the Integration of existing systems and proposed data base applications.

Job No. 1. Outline the conceptual structure of the FWIS, identifying major components, key elements, and data relationships.

Job No 2. Convert existing PC based Fish and Wildlife Databases. Table 1 to run on the Honeywell DPS 6/98 under IDS/II database software. Record types, data relationships. and access requirements will be defined. Programs to be written include:

- 1) Batch Update Programs - to update the database with data collected and entered on PC's or other computer systems (& to load data base).
- 2) On-line Update Programs - to update the database Immediately
- 3) Inquiry Programs - to perform inquiries on the database.
- 4) Data Extraction Programs - to extract data from the database for use on PC systems or for data exchange
- 5) dBase III programs - to build Data Base transactions from PC based Databases. For initially loading the data base with existing data and for pulling off any updates applied to the PC based databases.
- 6) dBASE III programs - to take data extracted from the FWIS data base and load it into a PC based database For pulling off any updates applied to the FWIS and for PC software analysis of data obtained from the FWIS.
- and 7) Ad-hoc reporting programs - to provide a simple means of summarizing data contained in the FWIS.

Job No. 3. Identify data base elements and relationships for major components of the FWIS.

Major components currently identified:.

- 1) Big Game Data Base - Population, Harvest, and Habitat Information
- 2) Bird Data Base - Game bird population, harvest, and habitat information
- 3) Fisheries Data Base - Population, harvest, creel census Information.
- 4) Anadromous Fish Data Base - Fish counts, water flows.
- 5) Resident Fish Stocking History/Plan & Inventory - Stocking records and production data.
- 6) Anadromous Fish Planting Database.
- 7) 'Idaho Lakes and Reservoirs Database.
- 8) Fish and Game Access Database.
- 9) Anadromous Fish Data Base - Fish counts and water flows.
- 10) Resident Fish - Density Inventory, and production data
- 11) Wildlife Trapping and Transplanting release data and monitoring information (radio collar frequencies. tagged animal data).
- 12) Pacific Northwest River Study.
- 13) Heritage Program Databases.
- 14) Any other PC based Database containing data of Statewide interest or would be enhanced by its' relationship(s) to other data contained in the FWIS.

Fish and Wildlife Data Base Development/Integration

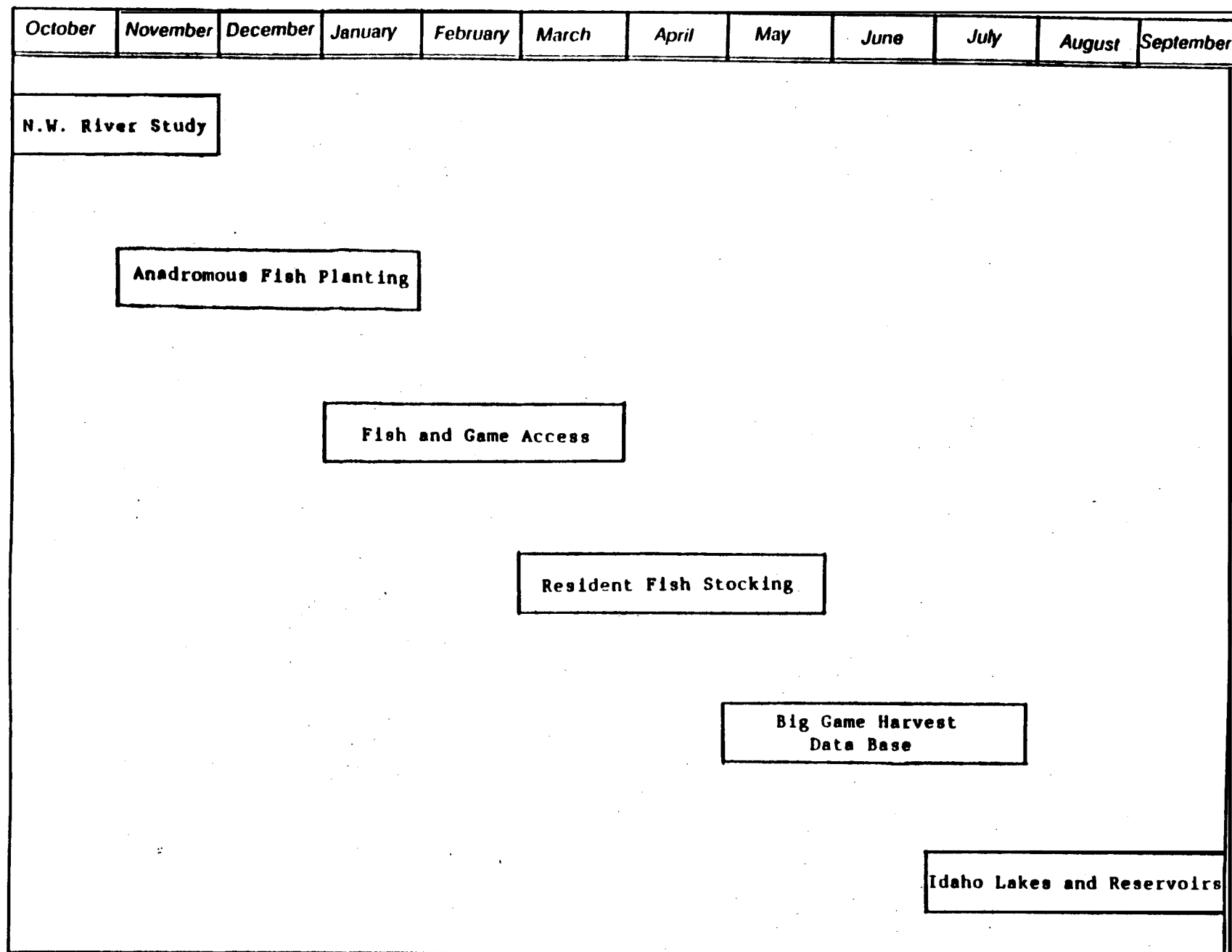


Figure 1. Implementation Schedule for 10-1-87 to 9-30-88



## **Data Base Overview**

### **Northwest River Study Data Same**

The initial Installation of the NWRS data base includes 48 different record types. The base element of the NWRS data base is the State Reach (Phase I) or EPA River Reach (Phase II). For each reach (stream segment) data has been collected relating to the Fisheries, Wildlife, Cultural, Natural Features, and Recreational value of that segment. Access into the database is available by Landowner, River Reach Number (State & EPA), Hydrologic Unit, Ecoregion, F&G Administrative Region, County, Natural Features, USGS Map #, and Species. The Phase I portion of the project was started October 1987 and completed March 1988. The Phase II portion is scheduled for Implementation in FY 90.

Following is a summary of the 48 record types.

#### **LANDOWNERS**

File of major land owners Contains Owner code and description. Linked to EPA River Reach via REACHOWNER record and to **State** Reach via STRCHOWNER. Cross reference record types are required because any one river reach (EPA or State) can be owned by multiple owners and any 1 LANDOWNER owns more than 1 river reach.

#### **REACHOWNER**

Cross reference between LANDOWNER records and EPA River Reach records (REACH). One record for each Owner/Reach combination (Any 1 reach may have several owners) The only data item in this record is one containing the percentage of that reach owned by that owner

#### **STRCHOWNER**

Cross reference between LANDOWNER records and State River Reach records (STATEREACH). One record for each Owner/Reach combination (Any 1 reach may have several owners). The only data item in this record is one containing the percentage of that reach owned by that owner.

#### **STATEREACH**

An older numbering scheme was once used to identify streams in the state prior to adopting the EPA River Reach numbering system Access to the data collected for EPA reaches is provided by means of a cross reference record (REACHXREF) . The cross reference record is required because a stream segment Identified by a State Reach number often contain more than 1 EPA reach and a single EPA reach may have been identified by more than 1 State Reach number. The STATEREACH record type contains the old State Reach number and name.

#### **REACHXREF**

Cross reference between State Reach records and River Reach records. One record exists for each State Reach/EPA Reach combination. The only data item in this record is one containing the percentage of the EPA reach contained by the State Reach.

#### **USGS MAP**

U.S. Geological Survey Map Number. This record provides a link to all reaches within a particular USGS Map. This record provides access to the River Study Database through cross reference records relating the USGS Map number to' the EPA River Reach and the State River Reach. This record contains the USGS map number and name.

## **REACHUSGS**

Cross reference between the USGS Map numbers and the EPA River reach. This record contains no data fields.

## **STRCHUSGS**

Cross reference between the USGS Map numbers and the State River reach. This record contains no data fields.

## **ECOREGION**

Not immediately available but obtainable from the BPA, Ecoregions provide a link to all EPA river reaches containing a particular Ecoregion. A River Reach may only be assigned a single Ecoregion code. The Ecoregion record contains the Ecoregion code and description.

## **REGION**

F&G Administrative regions are political boundaries that cover large areas and do not correspond to EPA or State river reach boundaries. The relation to EPA and State River Reaches is through cross reference records. required because any 1 river reach may belong to more than 1 administrative region. This record contains the region code (number), name, and area (sq.miles).

## **REACHREGION**

Cross reference between the F&G Administrative region and the EPA river reach system. One record exists for each Admin.Region/EPA River Reach combination. No data elements exist in this record. Its' sole purpose is to link admin. regions and EPA reaches.

## **STRCHREGION**

Cross reference between the F&G 'Administrative region and the State river reach system. One record exists for each Admin Region/State River Reach combination No data elements exist in this record, Its' sole purpose is to link admin. regions and State reaches.

## **COUNTY**

Another politically defined area not corresponding to the EPA or State river reach boundaries. Cross reference records are used to make the relations to EPA reaches and State reaches since any 1 river reach may belong to more than 1 county. Data elements contained by this record include the county number (1-44). "license plate" prefix (1A, 2A ...2T, V, W), FIPS code (01-89), name, and area (sq.miles).

## **REACHCOUNTY**

Cross reference record to relate counties and EPA river reaches. One record exists for each county/EPA river reach combination. the only data item contained in this record is the percentage of the EPA river reach belonging to the county.

## **STRCHCOUNTY**

Cross reference record to relate counties and State river reaches. One record exists for each county/State river reach combination. The only data item contained in this record is the percentage of the State river reach belonging to the county.

## **HYDROUNIT**

Record identifying the EPA hydrological units. A hydrologic unit represents a group of contiguous river reaches. The unit number represents the 1st 8 digits of the complete EPA river reach number of all of the reaches within the unit. Access to individual river reaches is gained by first accessing the Hydrologic Unit number (using the 1st 8 digits of the given reach number). Breaking down the reach number in this manner gives easy access to all information pertaining to a particular hydrologic unit. This record type contains the Unit number, unit name, area (sq.miles in Idaho?). State river reaches are also contained within these EPA hydrologic units and may be accessed via the Hydro-unit number .

## **REACH**

Record identifying the EPA river reach (stream segment). Linked to Owners. State Reaches. F&G Drainages, Ecoregions, Admin.Regions, and Counties through cross reference record types. Connected to each river reach record are Fisheries, Wildlife, Flora (potentially). Cultural. Natural Features. and Recreation record types Data Items include the last 7 digits (2 decimals) of the EPA river reach number (Stream Segment + Mile Point). segment level and name. type of reach, upstream and downstream reach numbers. Channel type. length, width, depth. % gradient. and substrate percentages, habitat percentages. comments, overall ratings for fisheries, wildlife. cultural. natural features. and recreation. and the date the ratings were last updated.

## **NWRSFISH**

This record type is a member of an individual EPA River reach record. The two records are linked together based on the EPA river reach number. Data contained in this record include quality of habitat, anadromous use, concern to T/E species. combined habitat & specie value. abundance rating, angler use rating. sport fishery value. overall rating. and comments. Connected to this record type are 1 or more fish specie detail records (NWRSFISHSPC) which identify which species have been identified as occurring in that EPA Reach segment.

## **NWRSFISHSPC**

This record identifies one specie (via link to Specie Master record) that occurs in the EPA stream segment to which the record belongs. The only data item in this record is one for recording density estimates for that specie on that river reach.

## **NWRSWILD**

The same as the NWRSFISH record type except the data contained in this record pertains to wildlife rather than fish. Wildlife Specie Detail records (NWRSWILDSPC) which identify species occurrence are connected to this record type. Wildlife data elements include Bald Eagle use and big game use indicators, habitat rating. specie value rating, hunting access rating, # of hunter/trapper days, state importance, region importance, national importance. and viewing ratings, as well as type of access. cover type, overall rating, and comments.

### **NWRSWILDSPC**

This record identifies one specie (via link to Specie Master record) that occurs in the stream segment to which the record belongs. The only data item in this record is one for recording density/population estimates for that specie on that river reach.

### **NWRSFLORA**

The same as the FISHERIES and WILDLIFE record types except the data to be contained in this record pertains to plants - their occurrence and importance. Individual species of plants would be identified by connected Flora Detail records (1 for each specie Identified).

### **NWRSFLORASPC**

This record identifies one specie (via link to Specie Master record) that occurs in the stream segment to which the record belongs. The only data Item in this record is one for recording abundance estimates for that specie on that river reach.

### **NWRSCULT**

This record contains the cultural information pertaining to a given EPA river reach. The record (1 per river reach) contains data pertaining to the presence/absence of archaeological sites/surveys, historical sites/surveys, architectural sites/surveys, and archaeological, historical, and architectural values (ratings).

### **NWRSNATF**

This record contains information regarding the Natural Features of an EPA river reach. Record contains the overall rating and date of the rating. Belonging to this record are detail Natural Feature records (NWRSNATFDTL) which identify individual Natural Features occurring within the river reach.

### **NWRSNATFDTL**

This record identifies an individual Natural Feature that occurs in the stream segment to which the record belongs - (One record for each Natural Feature occurring in the segment). This record type contains comments regarding the natural feature and a value rating for that feature. This record is also a member of two sets. 1) a Natural Features Master (NATFEATURE) and 2) a Natural Features Type (NATFTYPE).

### **NWRSRECR**

Record containing recreation data relating to an EPA river reach. The Record contains the source of the information, presence/absence indicators of land/water recreation opportunities, water characteristics (sporting classes), user origins, access levels, ROS & VRM codes, overall rating, and comments.

## **PHIFISH**

This record type is a member of an individual State Reach record. The two records are linked together based on the State reach number. Data contained in this record include quality of habitat, anadromous use, concern to T/E species, combined habitat & specie value, abundance rating, angler use rating, sport fishery value, overall rating, and comments. Connected to this record type are 1 or more fish specie detail records (PH1FISHSPC) which identify which species have been identified as occurring in that segment.

## **PHIFISHSPC**

This record identifies one specie (via link to Specie Master record) that occurs in the State reach to which the record belongs. There are no data items in this record type.

## **PH1WILD**

The same as the PHIFISH record type except the data contained in this record pertains to wildlife rather than fish. Phase I Wildlife Specie Detail records (PH1WILDSPC) which identify species occurrence are connected to this record type. Wildlife data elements include a Specie rating, habitat value, habitat type, access rating, access methods, hunting & viewing days rankings, state value, region value, national value, overall rating, and comments.

## **PH1WILDSPC**

This record identifies one specie (via link to Specie Master record) that occurs in the State reach to which the record belongs. There are no data items in this record.

## **PH1CULT**

This record contains the cultural information pertaining to a given State reach. The record (1 per State reach) contains data pertaining to the presence/absence of archaeological sites/surveys, historical sites/surveys, architectural sites/surveys, and archaeological, historical, and architectural values (ratings).

## **PHINATE**

This record contains information regarding the Natural Features of a State river reach. Record contains the overall rating, date of the rating, and comments. Belonging to this record are detail Natural Feature records (PHINATFDTL) which identify individual Natural Features occurring within the State river reach.

## **PHINATFDTL**

This record identifies an individual Natural Feature that occurs in the State reach to which the record belongs (One record for each Natural Feature occurring in the reach). There are no data items in this record, It only serves as a link to a Master Natural Features record type (NATFEATURE).

## **PHIRECR**

Record containing recreation data relating to a State reach. The Record contains presence/absence indicators of land/water recreation opportunities, water characteristics (sporting classes), user origins, access levels, ROS & VRM codes, overall rating, and comments.

## **NATFEATURE**

Record type Identifying Natural Features. Contains the Natural Features acronym (code) and description. Linked to the Natural Features detail records for individual EPA and State river reaches.

## **NATFTYPE**

Record type identifying types of Natural Features, e.g. Potential National Natural Landmarks, Proposed Wilderness Areas. etc. Contains the Acronym for the Type and the description. Linked to the Natural Features detail records for individual EPA and State river reaches.

## **SPECIE**

Record type identifying all species of plants and animals occurring in the State. Each specie is linked to specie detail records (Fish, Wildlife. and Flora) for Individual river reaches (EPA and State), The specie master provides quick access to all river reaches containing data for a particular species of plant or animal. The record contains the 6 digit specie code, the common name. the scientific name. and alternate codes for the species.

## **TABLES**

This record type links CALC KEY record types together to make it easier and faster to list all CALC KEY records. For example. Table Number '01' in TABLES contains the link to all STATEREACH records: Table Number '02' links together all REACH records: Table Number '03' links all HYDROUNIT records.

## **LONAME**

This record type is the key to the LANDOWNER file by Landowner Name It is used by the inquiry program to do table look-ups

## **MAPNAME**

This record type is the key to the USGS MAP file by Map Name. It is used by the inquiry program to do table look-ups.

## **HUNAME**

This record type is the key to the HYDROUNIT file by Hydrologic Unit Name. It is used by the inquiry program to do table look-ups.

## **SRNAME**

This record type is the key to the STATEREACH file by State Reach Name. It is used by the inquiry program to do table look-ups.

## **RCHNAME**

This record type is the key to the REACH file by EPA River Reach Name. It is used by the inquiry program to do table look-ups.

## **SPCNAME**

This record type is the key to the SPECIE file by Specie Common Name. It is used by the inquiry program to do table look-ups.

**NFNAME**

This record type is the key to the NATFEATURE file by Natural Feature Name. It is used by the inquiry program to do table look-ups.

**NFTYPNAME**

This record type is the key to the NATFTYPE file by Natural Feature Type name. It is used by the inquiry program to do table look-ups.

**ECORNAME**

This record type is the key to the ECOREGION file by Ecoregion Name. It is used by the inquiry program to do table look-ups.

## **F M Planting Data Base**

The initial installation of the Planting data base included 12 different record types. The base element of the Planting data base is the Planting data. For each planting record, data have been collected relating to location, quantity of fish stocked, and stocking methods. Access into the database is available by Stocking Month/Year, Hatchery, Stock size, Species, F&G Administrative Region, County, Catalog Number, and Stream Name. This portion of the project was started March 1988 and completed June 1988.

One record (type of fish) was added to the Anadromous Planting database in order to incorporate stocking data for Resident fish. This portion of the project was started May 1988 and completed June 1988.

Following is a summary of the 13 record types.

### **ANADPLANT**

File of Anadromous and Resident fish stocking information. Data items include the month, day, and year of the planting, the number and/or pounds of fish planted, the method used to do the planting (1-truck, 2-air, 3-horse and 4-back-pack), and the license number, if the planting was done by truck.

### **CATALOG**

File of streams, rivers, lakes and reservoirs in the state. These are identified by a numbering scheme used by the Fisheries Bureau. The record contains the catalog number, stream name, and EPA hydrologic unit number corresponding to the catalog number.

### **CATNAME**

This record type is the key to the CATALOG file by Stream name. It is used by the inquiry program to do table look-ups.

### **HATCHERY**

This record identifies Fish Hatcheries within the state. It contains the 2 digit Hatchery number, hatchery name and hatchery name abbreviation code. This record provides links to all planting records of the planting and rearing hatcheries.

### **HATCHNAME**

This record type is the key to the HATCHERY file by Hatchery Name. It is used by the inquiry program to do table look-ups.

### **MONTH**

Record type identifying months of the year. This record provides a link to all stocking records during a specific month. The record contains a 2 digit month code. It is used by the inquiry program to do table look-ups.

### **YEAR**

Record type identifying stocking years. This record provides a link to all stocking records during a specific year. The record contains a 2 digit year code. It is used by the inquiry program to do table look-ups.



## **REGION**

F&G Administrative regions are political boundaries within the state. This record contains the region code (number), name, and area (sq.miles)

## **COUNTY**

Another politically defined area within the state. Data elements contained by this record include the county number (1-44), "license plate" prefix (IA, 2A,,,,,2T, V, W), FIPS code (01-89), name, and area (sq.miles).

## **TABLES**

This record type links CALC KEY record types together to make it easier and faster to list all CALC KEY records. For example, Table Number '10' in TABLES contains the link to all HATCHERY records; Table Number '13' links together all STOCKSPECIE records; Table Number '15' links all CATALOG records.

## **STOCKSIZE**

Record type identifying the size of fish at the time of planting. Data elements contained by this record include the 1 digit stock size code, and the definition of the stock size (1-fry (0-3"), 2-fingerling (3-6"), 3-catchable (6+), 4-eyed eggs, and 5-adult fish).

## **STOCKSPECIES**

Record type identifying all species of Anadromous and Resident fish which are planted by hatcheries in the state. The record contains the 2 digit specie code developed by the Fisheries Bureau, and the common name.

## **FISH-TYPE**

This record identifies the types (Anadromous or Resident) of fish planted. The only data item in this record is the fish type code (A-Anadromous and R-Resident)

## **Access Sites Data Base**

The initial installation of the Access data base includes 8 different record types. The base element of the Access data base is the Access Site. For each site, data have been collected relating to the Fisheries, Wildlife, and Recreational value of that site. Access into the database is available by Site Code, Site Name, Hydrologic Unit, F&G Administrative Region, and County. This portion of the project was started June 1988 and completed July 1988.

Following is a summary of the 8 record types.

### **FGACCESS**

File of Fish and Game Access site information. Data Items include the administrator code, brief description of the location, type of the location (i.e. take, reservoir, river, etc.), number of acres, and land/water/sportsman opportunities and access levels.

### **SITE**

File of Fish and Game Access Sites in the state. The record contains the 3 digit site code and the name of the site.

### **SITENAME**

This record type is the key to the SITE file by Site Name. It is used by the inquiry program to do table look-ups.

### **REGION**

F&G Administrative regions are political boundaries within the state. This record contains the region code (number), name, and area (sq.miles).

### **COUNTY**

Another politically defined area within the state. Cross reference records are used to make the relation to access sites since any 1 site may belong to more than 1 county. Data elements contained by this record include the county number (1-44), "license plate" prefix (IA, 2A,,,,,2T, V, W), FIPS code (01-89), name, and area (sq.miles).

### **ACCESSCOUNTY**

Cross reference record to relate counties and Fish and Game Access sites. One record exists for each county/Access site combination. The only data item contained in this record is the percentage of the Access site belonging to the county.

### **HYDROUNIT**

Record identifying the EPA hydrological units. A hydrologic unit represents a group of contiguous river reaches. The unit number represents the 1st 8 digits of the complete EPA river reach number of all of the reaches within the unit. This record type contains the Unit number, unit name, area (sq.miles "in Idaho?"). Fish and Game Access sites are also contained within these EPA hydrologic units and may be accessed via the Hydro-unit number.

### **TABLES**

This record type links CALC KEY record types together to make it easier and faster to list all CALC KEY records. For example, Table Number '16' in TABLES contains the link to all SITE records.

## **Lakes and Reservoirs Data Baas**

The initial installation of the Lake data base includes 10 different record types. The base element of the Lake data base is the Lake or Reservoir location. For each location, data have been collected relating to the map coordinates, number of acres, and comments. Access into the database is available by Lake location number (Hydrologic Unit & sequence number), Lake or Reservoir name, F&G Administrative Region, County, Landowner Code, and Wildlife Game Management Unit. This portion of the project was started June 1988 and completed July 1988.

Following is a summary of the 10 record types.

### **LAKELOC**

File of lakes and reservoirs in the state. These are identified by a numbering scheme using the 8 digit Hydrologic unit number and a 3 digit sequence number. The record contains the lake location number, lake location name, forest identifier, latitude and longitude, section, township and range, USGS map number and name, elevation, number of acres, and comments.

### **LOCNAME**

This record type is the key to the LAKELOC file by Lake name. It is used by the inquiry program to do table look-ups.

### **LANDOWNERS**

File of major land owners. Contains Owner code and description. Linked to Lake Locations via LAKEOWNER record. Cross reference record types are required because any one Lake or Reservoir can be owned by multiple owners and any 1 LANDOWNER owns more than 1 lake or reservoir.

### **LAKEOWNER**

Cross reference between LANDOWNER records and Lake location records (LAKELOC). One record for each Owner/Lake combination (Any 1 lake may have several owners). The only data item in this record is one containing the percentage of that lake/reservoir owned by that owner.

### **COUNTY**

Another politically defined area within the state. Cross reference records are used to make the relation to lake locations since any 1 lake/reservoir may belong to more than 1 county. Data elements contained by this record include the county number (1-44), "license plate" prefix (1A, 2A ..2T, V, W), FIPS code (01-89), name, and area (sq.miles).

### **LAKECOUNTY**

Cross reference record to relate counties and Lake Locations. One record exists for each county/lake combination. The only data item contained in this record is the percentage of the Lake/Reservoir belonging to the county.

## **REGION**

F&G Administrative regions are political boundaries within the state. This record contains the region code (number), name, and area (sq.miles).

## **HYDROUNIT**

Record identifying the EPA hydrological units. A hydrologic unit represents a group of contiguous river reaches. The unit number represents the 1st 8 digits of the complete EPA river reach number of all of the reaches within the unit. This record type contains the Unit number, unit name, area (sq.miles in Idaho? ). Lakes and Reservoirs are also contained within these EPA hydrologic units and may be accessed via the Hydro-unit number.

## **GMUNIT**

Fish and Game Management Unit Number. This record provides a Zink to all Game management Units within a particular lake or reservoir area. This record contains the Game Management Unit number.

## **TABLES**

This record type links CALC KEY record types together to make it easier and faster to list all CALC KEY records. For example. Table Number '17' in TABLES contains the link to all LAKELOC records.

## **Big Game Harvest Estimates Data Base**

The initial installation of the Big Game Harvest data base includes 8 different record types. The base element of the Big Game Harvest data base is the Hunt Information. For each hunt, data have been collected relating to the number of hunters, number of days, success rates and specific information relating to species of Big Game being hunted. Access into the database is available by Year, Wildlife Game Management Unit/Area, Type of hunt, F&G Administrative Region and Species. This portion of the project was started August 1988 and was completed September 1988.

Following is a summary of the 8 record types.

### **HUNT**

This record reflects the statistical results of a telephone survey of hunters. The record contains a Resident/Nonresident Identifier, number of hunters, number of animals harvested, percent success, number of days hunted, percent mule vs whitetail deer, percent male, number of permits issued, controlled hunt numbers, and antler point information.

### **HUNTTYPE**

This record identifies the hunt types (i.e. General, Controlled, Archery, and Muzzleloader). Data items include a 1 digit hunt type code and the hunt description.

### **SPECIE**

Record type identifying all species of plants and animals occurring in the State. The specie master provides a link to hunt information for big game species. The record contains the 6 digit specie code, the common name, the scientific name, and alternate codes for the species.

### **GMUNIT**

Fish and Game Management Unit Number. This record provides a link to all Game management Units within a particular lake or reservoir area. This record contains the Game Management Unit number.

### **GMAREA**

Fish and Game Management Area Number. This record provides a link to all Game management Areas participating in General Hunts. This record contains the Game Management Area number and the numbers of the Game Management Units within the area.

### **REGION**

F&G Administrative regions are political boundaries within the state. This record contains the region code (number), name, and area (sq.miles).

### **YEAR**

Record type identifying hunt years. This record provides a link to all harvest estimate records during a specific year. The record contains a 2 digit year code. It is used by the inquiry program to do table look-ups.

### **TABLES**

This record type links CALC KEY record types together to make it easier and faster to list all CALC KEY records. For example, Table Number '19' in TABLES contains the link to all GMAREA records.

## **SYSTEM FLOW NARRATIVE**

### **DATA ENTRY & UPDATE**

Data can be added to the database or updated, via batch or online methods. The batch update is used primarily for "down-loading" data entered on PC's or data obtained "In bulk from other Agencies. On-line update is available to perform the same functions but will be used primarily for performing corrections and smaller update tasks. Batch transactions are created with appropriate record identifiers and update codes for processing against the database. An exception report is produced which lists any transactions that could not pass appropriate edits. Transactions listed on the exception report must be corrected and re-submitted with another batch or corrected and entered into the database through the on-line update process. Edits for both the on-line and batch update processes are identical. The benefit on on-line update is that errors are caught at the time of entry while the operator has the information in front of him(her) from which to make the appropriate corrections.

### **DATA EXTRACTION**

A program (AZ7 or COBOL) is provided by which selected subsets of data may be extracted from the IDS/II data base for subsequent transfer to PC dBASE III files or to magnetic tape for data exchange with other agencies.

### **INQUIRIES**

An on-line inquiry program (COBOL) was written to allow users to search for and view information stored in the IDS/II data base. A facility is provided for printing information that is displayed on the screen. Inquiries using single or multiple keys are supported.

### **REPORTS**

AZ7 will be utilized to produce reports from the data contained in the data base. Ad hoc reports can be produced quickly using the AZ7 query facility and queries for commonly requested reports can be stored for later use. The basic AZ7 language can be learned quickly and the more complex data base "navigation" routines can be provided as 'MACROS' for use by novice users.

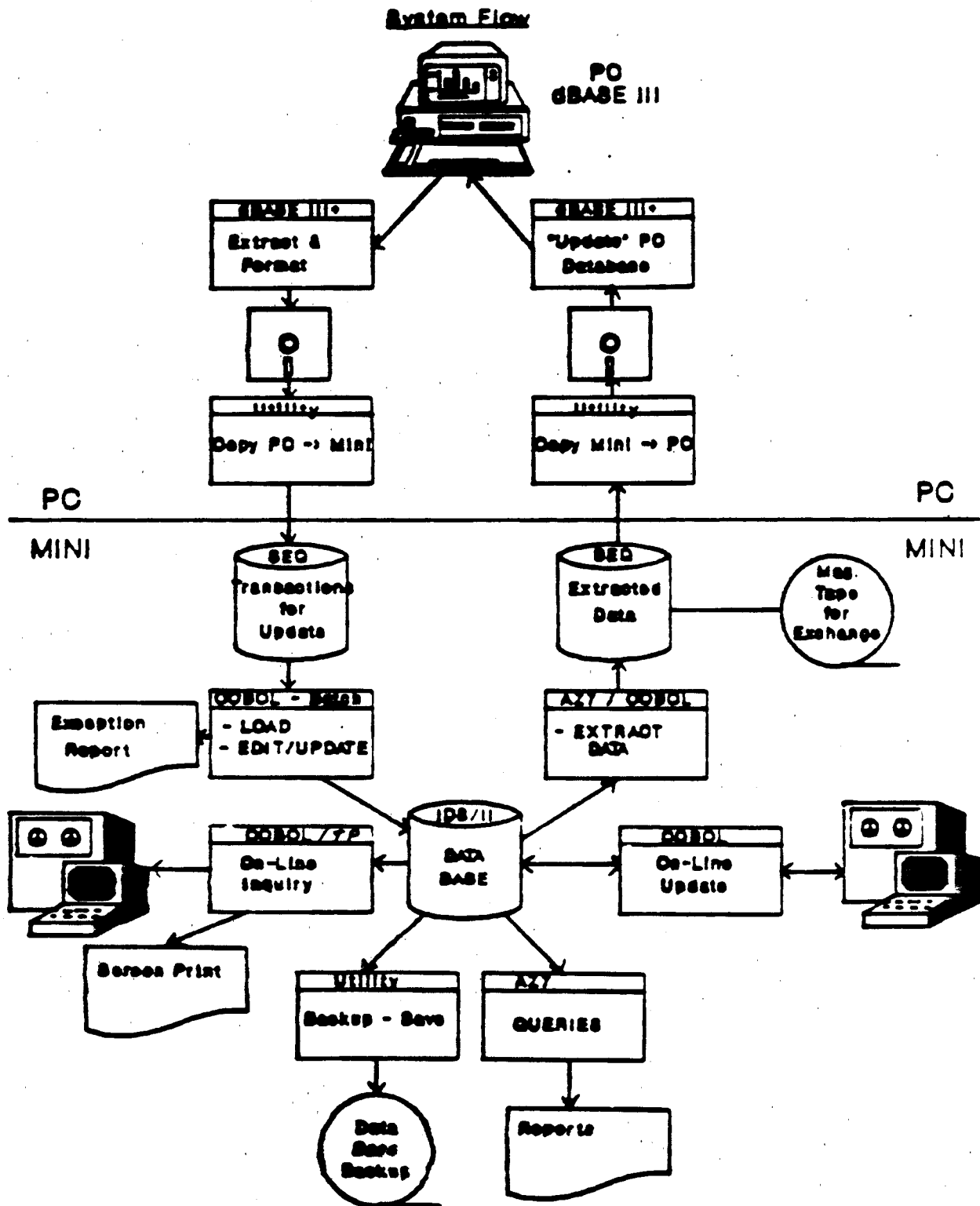


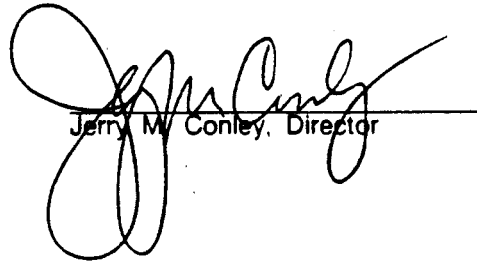
Figure 2. Flow chart for Fish and Wildlife Information System data base.

Submitted by:

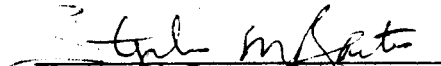
Judith V. Clark  
DP Database Analyst

Approved by:

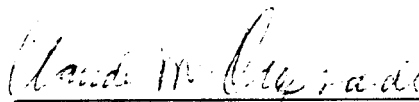
IDAHO DEPARTMENT OF FISH & GAME



Jerry M. Conley, Director



Stephen M. Barton, Chief  
Bureau of Administration



Claude Clapsaddle  
Data Processing Manager

NOV 2 1988